Edmonton Area Series Report No. 51

1987
# ALL ALBERTA STUDY
(Including The Edmonton Area Study)

## SAMPLING REPORT

by

Clifford Kinzel

Population Research Laboratory
Department of Sociology
The University of Alberta
Edmonton, Alberta
T6G 2H4

The 1987 All Alberta Study (AAS) was administered and supported by the Population Research Laboratory and the Department of Sociology at The University of Alberta.

Study Director and Principal Investigator

L.W. Kennedy

May 1987

## INTRODUCTION

This report describes the sampling design and data collection method of the 1987 All Alberta Study (AAS). A brief demographic profile of the sample and data collection statistics are also presented.

For the past ten studies, the annual survey project conducted by the Population Research Laboratory has been confined to the corporate boundaries of the City of Edmonton (Edmonton Area Study, EAS). However, for this eleventh year, an expanded Study was undertaken to include all of Alberta comprising both face-to-face and telephone interviewing.

Face-to-face interviewing was conducted in the City of Edmonton while telephone interviewing was conducted for the remainder of the Province.

The Department of Sociology, University of Alberta, conducts the AAS and EAS Studies through its research facility, the Population Research Laboratory (PRL). Over the years, the project has afforded University researchers and local community agencies an opportunity to investigate and explore social issues of importance to Albertans in an on-going research framework.

This is the first report on the 1987 project. Subsequent papers on findings will be announced in the PRL's "In Summary" newsletter.

## THE QUESTIONNAIRE

Two questionnaires were used for the Study, one for the face-to-face component and one for the telephone component. All the telephone questions were taken from the face-to-face instrument which was about one-half the length of the face-to-face questionnaire. Questions were virtually identical though a few questions had additional wording for suitable adminstration over the telephone. No response categories or scales were altered.

The questionnaires were of the amalgam type representing a collection of questions pertaining to specific research interests of University researchers and outside agencies. There was no designated special topic per se. A few questions such as those relating to abortion and smoking are replications from previous questionnaires. (See the Appendix for a complete listing of all the areas covered)

Both questionnaires were thoroughly pretested on a total of fifty-nine Edmonton householders.

## SAMPLING DESIGN

Main features of the sampling design are as follows:

1. Province of Alberta delineated into three areas.
   a. City of Edmonton for face-to-face interviewing.
   b. City of Calgary for telephone interviewing.
   c. Remainder of the Province for telephone interviewing (Other Alberta Areas).

2. Two-stage selection process.
   a. Selection of households.
   b. Selection of respondent with each household.

To retain the comparability of the Edmonton face-to-face sample with past EAS studies, a sample size of 400 or more was deemed necessary. This would also permit Edmonton to be analyzed as a separate entity. On the other hand, the sample sizes for Calgary and Other Alberta were primarily determined by budgetary constraints. At the same time a minimum sample size was sought to permit separate analysis for these two areas.[1]

FACE-TO-FACE POPULATION - Edmonton

The 1987 Edmonton population universe was designated as all persons 18 years of age or older who at the time of the survey were living in a dwelling unit that was enumerated during the City of Edmonton Civic Census

---

1. See Table 4 for final sample sizes obtained.

in the spring of 1986.

FACE-TO-FACE SAMPLE SELECTION - Edmonton

As in recent previous Edmonton Area Studies, the sampling frame consisted of a computerized list of addresses compiled by the City of Edmonton from their most current enumeration (1986). From the computer tape, a simple random sample of 620 addresses for personal interviewing was selected. Nursing homes, military and temporary residences were deleted from the sample. Within the household, one eligible person was selected as the respondent for the one hour interview.

Interviewers were instructed to obtain an equal number of male and female respondents within their allotment of interviews. As adult males are generally more difficult to contact, the following selection procedure guidelines were set for the interviewers to assist them in obtaining their quotas.

a. The dwelling unit must be the person's usual place of residence and he/she must be 18 years of age or older.

b. If an adult male answers the door and is willing to be interviewed, he is the respondent.

c. If an adult female answers the door and there is an adult male present who is willing to be interviewed, interview the male. If the male is not willing to be interviewed, and the female is willing, interview the female.

d. If an adult female answers the door and there is no adult male present, choose her as the respondent.

The final sex breakdown of the sample, using the above procedures, was 50.7% male and 49.3% female.

In households where a completed interview was obtained, 90% of the first eligible persons accepted. Fifty-eight percent of the first eligible persons encountered were female.

TELEPHONE POPULATION - Calgary and Other Alberta Areas

The population universe designated for telephone interviewing was all persons 18 years of age or older who at the time of the survey were living in a dwelling unit in Alberta outside of the City of Edmonton that could be contacted by direct-dialing. From this population two samples were drawn to cover the area: the first one represented the City of Calgary and the second represented the remainder of the region.

TELEPHONE SAMPLE SELECTION - Calgary

The three-digit prefixes of the exchanges in Calgary were assembled to generate seven-digit telephone numbers. This was done in two stages: First, an exchange was randomly selected, then a four-digit random number between 0000 and 9999 was selected and appended to the three-digit number of the exchange. This process was repeated to obtain as many telephone numbers as needed. Any duplicates were discarded. The telephone numbers were then checked against the most recent edition of the "Calgary Numerical and Street Address Directory" to eliminate businesses and numbers in non-existent banks.[2]

TELEPHONE SAMPLE SELECTION- Other Alberta Areas[3]

The three-digit exchange prefixes were not used for selection for "Other Alberta Areas" as they were for Calgary because no "reverse directory" is available for these areas to screen out the large number of non-working numbers that would be generated. Therefore, a different approach was implemented to reduce to occurrence of non-working numbers. It was as

---

2. It was not difficult to discern precisely the working banks as the telephone numbers are in ascending order.

3. Does not include the cities of Calgary and Edmonton.

follows.

All the most current telephone directories for these areas (a total of 18) were obtained from Alberta Government Telephones (AGT) and a 10 percent sample of telephone numbers[4] was keypunched for processing by computer. The process commenced by selecting random pages from each directory (comprising cities, towns and surrounding rural areas) and recording 10 percent of the total number of columns of telephone numbers into a computer file.[5] From these telephone numbers, the last two digits were stripped off to derive five digits banks. Duplicates were eliminated.[6]

The actual sample of telephone numbers was then generated from the file of banks by selecting a simple random sample of five-digit banks with replacement and appending a random number between 00 and 99 to each of them. The resulting telephone numbers were examined for duplicates and repetitions were discarded.

As with the face-to-face interviewers, the telephone interviewers were given instructions to obtain an equal number of male and female respondents in their assignments. Again as adult males are generally more difficult to contact, the selection procedure guidelines were exactly the same as they were to the face-to-face interviewing. At the telephone number selected:

a. The dwelling unit must be the person's usual place of residence and he/she must be 18 years of age or older.

---

4. The total number of telephone numbers extracted was 51,953.

5. The IBM PC spreadsheet package LOTUS 1-2-3 version 2.01 was used to select the random pages and the number of columns to keypunch.

6. Pay-phone numbers in the province have a "9" as the fourth digit e.g. 484-9xxx. Although no residences or businesses are supposed to have the fourth digit as "9" a cursory check of the directories revealed that there were sufficient number that had this digit to warrant not screening out these numbers as pay-phones.

b. If an adult male answers the phone and is willing to be interviewed, he is the respondent.

c. If an adult female answers the phone and there is an adult male present who is willing to be interviewed, interview the male. If the male is not willing to be interviewed, and the female is willing, interview the female.

d. If an adult female answers the phone and there is no adult male present, choose her as the respondent.

The final sex breakdown of the samples, using the above procedures, was:

| | Male | Female |
|---|---|---|
| Calgary | 47.5% | 52.5% |
| Other Alberta | 49.3% | 50.7% |

## CALCULATION OF WEIGHTS

The final sample obtained for each area is not proportional to the Alberta population it makes up. For instance, Edmonton is over-sampled as shown by TABLE 1. Edmonton makes up only 24% of the Alberta population but has 43% of the interviews. Therefore, in order to combine the samples for a provincial sample weighting is necessary.[7] The following table contains the information used to calculate the weights.

---

7. If the samples are being analyzed individually, then no weighting is necessary; for example, if the researcher is only interested in the Edmonton responses. In the SPSSx program prepared by the PRL the weighting variable has been inserted but not called. To turn on the weighting insert the line: WEIGHT BY WT.

TABLE 1

Calculation of Weights

| | Population 1986[8] | Percent of Pop. | Sample Size | Percent of Samp. | Weight Factor | Weighted Sample |
|---|---|---|---|---|---|---|
| Edmonton | 573,982 | 24.2613% | 454 | 43.4449% | 0.558439 | 254 |
| Calgary | 636,104 | 26.8871 | 244 | 23.3492 | 1.151521 | 281 |
| Other Alberta | 1,155,739 | 48.8514 | 347 | 33.2057 | 1.471173 | 510 |
| TOTAL Alberta | 2,365,825 | 100.000% | 1045 | 100.000% | | 1045 |

## DATA COLLECTION

FACE-TO-FACE DATA COLLECTION - Edmonton

A total of 36 trained interviewers from the PRL interviewing pool conducted the interviewing which began February 5th. In the week prior to the commencement of the fieldwork an introductory letter was sent to each selected address. It briefly described the nature of the study and advised the householder of his selection indicating that he should expect a visit from an interviewer in the near future.

If the interviewers were unsuccessful in establishing contact on their first visit, they were to make four callback attempts before declaring an address as "no contact."

Data collection took six weeks with 67% of the interviewing being completed during the first two weeks. The average interviewer completed 18 interviews. Twenty-five addresses were found to be ineligible, vacant or demolished buildings. Only these addresses were replaced by another random selection. They were defects in the sampling frame rather than non-response

---

8. The total 18+ population for 1986 for Calgary was not available. Therefore total population was used in calculation of weights.

addresses. No other replacements were made.

Monday had the highest number of completions while Friday and Sunday had the fewest completions. The completed interviews were selectively and randomly verified through a series of checks which included re-contacting respondents by telephone. No significant discrepancies or irregularities were found.

TABLE 2

Comparison of EAS 1986 and EAS 1987 Callbacks

| Number of Callbacks | EAS 1986 | EAS 1987 |
|---|---|---|
| 0 | 25% | 32% |
| 1 | 31 | 31 |
| 2 | 18 | 18 |
| 3 | 11 | 11 |
| 4 | 8 | 4 |
| 5 | 5 | 3 |
| 6+ | 2 | 2 |
| | 100% | 101% [9] |

TELEPHONE DATA COLLECTION - Calgary and Other Alberta Areas

The telephone interviewing began at the end of January and was completed by the end of February, a little over four weeks. Interviewing for the City of Calgary was supervised locally with seven experienced interviewers conducting the interviewing from their homes. For the "Other Alberta" portion of the telephone interviewing, five interviewers worked from a private office in the Population Research Laboratory using a "WATS" line. [10]

If the interviewers were unsuccessful in establishing contact on their first call, they were to make ten callback attempts before declaring a telephone number as "no contact." Upon making contact, the interviewer

---

9. Total does not equal 100% owing to rounding error.

10. The interviewers worked from 9 am to 9 pm, seven days a week.

identified herself, verified the telephone number, and then asked the screening questions for selecting the respondent.

The telephone data collection took four weeks with 52% of the interviewing being completed during the first two weeks. The average interviewer completed 42 interviews.

Fifteen percent of the completed and refused interviews were randomly and selectively verified. No significant discrepancies or irregularities were found.

The following Table shows the percentage of the interviews obtained according to the number of callbacks:

TABLE 3

Callbacks for Telephone and Face-to-Face Samples

| Number of Callbacks | Other Alta Telephone | Calgary Telephone | Telephone Overall |
|---|---|---|---|
| 0 | 40% | 29% | 35% |
| 1 | 26 | 25 | 26 |
| 2 | 11 | 16 | 13 |
| 3 | 8 | 10 | 9 |
| 4 | 5 | 4 | 4 |
| 5 | 3 | 3 | 3 |
| 6 | 1 | 5 | 3 |
| 7 | 2 | 3 | 2 |
| 8 | 1 | 3 | 2 |
| 9 | 1 | 2 | 2 |
| 10+ | 3 | 0 | 2 |
| | 101% | 100% | 101% |

Table 4 shows additional data collection statistics for the three samples. Table 5 shows the final result of the initial sample selections.

TABLE 4

Data Collection Summary

| | Tele. Other Alta | Tele. Calgary | Face-to-Face Edmonton |
|---|---|---|---|
| Interviews conducted on 1st contact | 40% | 29% | 32% |
| Interviews started before 6 pm weekdays | 65% | 52% | 57% |
| Interviews completed Monday to Friday | 75% | 78% | 74% |
| Interviews obtained without appointment | 83% | 73% | 55% |
| Response rate | 81% | 77% | 76% |
| Median interviewing time in minutes | 26 | 27 | 58 |
| Sample size | 347 | 244 | 454 |

TABLE 5

Breakdown Dispositions of Original Samples

| | Telephone Other Alberta | Telephone Calgary | Face-to-Face Edmonton |
|---|---|---|---|
| Original Sample drawn | 858 | 574 | 620 |
| Deduct: | | | |
| non-residential/ineligible | -135 | -99 | |
| not in service/vacant/demol. | -287 | -157 | -25 |
| 2nd residence | -6 | | |
| Corrected Sample[11] | 430 | 318 | 595 |
| Distribution of Corrected Sample | | | |
| completed interviews | 347 | 244 | 454 |
| no answer/contact | 41 | 20 | 26 |
| refused | 40 | 46 | 109 |
| language problem | 2 | 8 | 6 |
| Total | 430 | 318 | 595 |

---

11. The calculation of response rates in TABLE 6 is based on the corrected sample. Error-free and clean sampling frames should yield the "corrected sample" without adjustments. However, in practice, when using public documents that are time-dated the perfect sampling frame is rarely found.

From Table 5 the percentage of valid residential numbers derived from the original samples was 55.4% for Calgary and 50.1% for Other Alberta.

TABLE 6

Final Questionnaire Status for
Telephone and Face-to-Face to Samples

| | Telephone Other Alberta | Telephone Calgary | Face-to-Face Edmonton |
|---|---|---|---|
| Refused | 9.3% | 14.5% | 18.3% |
| No contact | 9.5 | 6.3 | 4.4 |
| Language problem | 0.5 | 2.5 | 1.0 |
| Total non-response | 19.3% | 23.3% | 23.7% |
| Completed interviews | 80.7 | 76.7 | 76.3 |
| | 100.0% | 100.0% | 100.0% |

## THE DATA

The raw data file exists in card image format[12] and is stored on magnetic tape. The data were tabulated and cleaned in accordance with generally accepted survey research practices using SPSSx (Statistical Package For The Social Sciences) and programs developed by the PRL.

The rectangular data set contains 374 variables for each case. There are a total of 1045 cases[13] with 10 decks per case. A SPSSx systems file with labels has been created to analyze the data.

In tabulating the data, the two questionnaires were coded in exactly the

---

12. Up to 80 columns per record.

13. The breakdown of cases according to area: a) face-to-face Edmonton 454 b) telephone Calgary 244 c) telephone Other Alberta 347.

same manner to permit merging of the data without adustments.[14] The three areas or the two modalities of collection can be easily separated by the first variable in each deck.

The data became available for analysis in May (1987), but access has been restricted for a minimum of six months to agencies and persons involved in the planning, questionnaire design and execution of the survey. After the restriction period, the data will be deposited with the University of Alberta Data Library for public access. The questionnaire and codebook documentation will be available in printed and machine readable form from the Population Research Laboratory.

## DEMOGRAPHIC PROFILE

Table 7 is a summary of some of the major demographic variables. Household size distributions for the three samples are given in Table 8.

---

14. Users need only reference one codebook. Questions which are inapplicable to the telephone survey are clearly indicated.

TABLE 7

Demographic Profile of Respondents

| | Telephone Other Alberta | Telephone Calgary | Face-to-Face Edmonton |
|---|---|---|---|
| AGE (median) ..... | 40 | 33 | 38 |
| MARITAL STATUS | | | |
| single ..... | 15% | 25% | 21% |
| married/common-law ..... | 71% | 61% | 58% |
| divorced/sep/widowed ..... | 15% | 14% | 21% |
| RELIGION | | | |
| Protestant ..... | 64% | 50% | 46% |
| Roman Catholic & Other Catholic | 22% | 25% | 31% |
| Other ..... | 2% | 3% | 5% |
| No Preference/affiliation ..... | 12% | 23% | 18% |
| INCOME RANGES (median) | | | |
| household's ..... | $30-31999 | $32-33999 | $28-29999 |
| respondent's ..... | $14-15999 | $18-19999 | $18-19999 |
| DWELLING UNIT | | | |
| single-detached house ..... | 77% | 58% | 54% |
| multiple family apartments ..... | 9% | 21% | 29% |
| row/town house ..... | 3% | 9% | 9% |
| semi-detached/duplex ..... | 4% | 11% | 6% |
| other types ..... | 7% | 2% | 2% |

TABLE 8

Household Size Distributions for the
Telephone and face-to-face samples

| Household Size | Telephone Other Alberta | Telephone Calgary | Face-to-Face Edmonton |
|---|---|---|---|
| 1 person | 16% | 19% | 24% |
| 2 persons | 31 | 31 | 28 |
| 3 persons | 22 | 18 | 19 |
| 4 persons | 20 | 23 | 17 |
| 5 persons | 8 | 7 | 8 |
| 6 persons | 2 | 2 | 2 |
| 7+ persons | 1 | 0 | 1 |
| Total | 100% | 100% | 99% |

The Alberta weighted age distribution and weighted marital status distribution as compared to the June 1st, 1986 Postcensal estimate[15] are shown in Tables 9 and 10 respectively.

---

15. Statistics Canada. "Postcensal Annual Estimates of Population by Marital Status, Age, Sex and Components of Growth for Canada, Provinces and Territories, June 1, 1986." Catalogue 91-210, Volume 4.

TABLE 9

Age Distributions for
Postcensal Estimates and AAS

| | POST-CENSAL | AAS |
|---|---|---|
| 20-29 years | 30.0% | 26.5% |
| 30-39 years | 25.7 | 26.8 |
| 40-49 years | 15.4 | 18.1 |
| 50-59 years | 12.1 | 11.0 |
| 60+ years | 16.8 | 17.7 |
| TOTAL | 100.0% | 100.1% |

Index of Dissimilarity:[16] 4.7

TABLE 10

Postcensal and ASS Marital Status Distributions For
Respondents 20 Years of Age or Older

| | POST-CENSAL | AAS |
|---|---|---|
| SINGLE | 20.1% | 16.2% |
| MARRIED[17] | 68.8 | 70.4 |
| DIVORCED | 5.6 | 7.1 |
| WIDOWED | 5.4 | 6.4 |
| TOTAL | 99.9% | 100.1% |

Index of Dissimilarity: 4.0

---

16. The index represents the proportion of households that would have to move to a different category to make the distributions identical. The index can vary from 0 to 100. Any index less than 10 indicates that the distributions are similar. Source: Duncan, O.D., and Duncan, B. "Residential Distribution and Occupational Stratification." American Journal of Sociology, 60(5):493, March 1955.

17. Includes persons now married, separated (legally or otherwise but not divorced) and persons living in common-law unions.

## LONGITUDINAL DATA ANALYSIS

Because of the many questions replicated over the years on the Edmonton Area Studies it is possible for researchers to do cross-study analysis. The PRL has available a program which will retrieve any variable from a particular year and organize a raw data set to suit the needs of the user.

## AAS & EAS TIMETABLE

4th week of October - deadline for question submission

2nd week of December - pretest questionnaire finalized

1st week of January - pretest

3rd week of January - questionnaire finalized

1st week of February - interviewer training

February and March - data collection

April and May - coding, data entry, and data cleaning

June 30th - data ready for analysis

Those persons and organizations who are interested in submitting questions for the 1988 project on a time-sharing basis should contact the Director of the PRL before the end of October (1987).

## APPENDIX

## 1987 AAS & EAS QUESTION AREAS

1. Demographic Characteristics of Population

2. Health
   - a. community view
   - b. non-prescription drugs
   - c. alcohol consumption
   - d. diet
   - e. vitamin, mineral, herbal preparations
   - f. eating attitudes and habits

3. Smoking
   - a. smoking habits
   - b. smoking in the work place
   - c. smoking by-laws
   - d. general attitudes to smoking

4. Abortion Attitudes

5. Alberta Economy
   - a. attitudes
   - b. specialization and diversification

6. Family Violence
   - a. frequency
   - b. injury
   - c. consequences and deterrence
   - d. wife abuse prevalence

7. Crime
   - a. severity of harm
   - b. victimization
   - c. neighbourhood safety

8. Police
   - a. community role
   - b. view of activities
   - c. satisfaction with

9. Employment
   - a. travel
   - b. unions and management
   - c. union membership

10. Television Viewing

11. Other Issues
    a. views of school system
    b. seatbelts
    c. small business handgun use
    d. fertility
    e. automated machines
    f. political party preference
    g. personal finances